# P802.3cy

**Submitter Email:** david_law@ieee.org
**Type of Project:** Amendment to IEEE Standard 802.3-2018
**Project Request Type:** Initiation / Amendment
**PAR Request Date:** 14 Nov 2019
**PAR Approval Date:**
**PAR Expiration Date:**
**PAR Status:** Draft
**Root Project:** 802.3-2018

**1.1 Project Number:** P802.3cy
**1.2 Type of Document:** Standard
**1.3 Life Cycle:** Full Use

**2.1 Project Title:** Standard for Ethernet
Amendment: Physical Layer Specifications and Management Parameters for greater than 10 Gb/s Electrical Automotive Ethernet

**3.1 Working Group:** Ethernet Working Group(C/LM/WG802.3)
    **3.1.1 Contact Information for Working Group Chair:**
    **Name:** David Law
    **Email Address:** david_law@ieee.org
    **3.1.2 Contact Information for Working Group Vice Chair:**
    **Name:** Adam Healey
    **Email Address:** adam.healey@broadcom.com
**3.2 Society and Committee:** IEEE Computer Society/LAN/MAN Standards Committee(C/LM)
    **3.2.1 Contact Information for Standards Committee Chair:**
    **Name:** Paul Nikolich
    **Email Address:** p.nikolich@ieee.org
    **3.2.2 Contact Information for Standards Committee Vice Chair:**
    **Name:** James Gilb
    **Email Address:** gilb@ieee.org
    **3.2.3 Contact Information for Standards Representative:**
    **Name:** James Gilb
    **Email Address:** gilb@ieee.org

**4.1 Type of Ballot:** Individual
**4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:** Mar 2023
**4.3 Projected Completion Date for Submittal to RevCom:** Oct 2023

**5.1 Approximate number of people expected to be actively involved in the development of this project:** 50
**5.2.a Scope of the complete standard:**This standard defines Ethernet local area, access and metropolitan area networks. Ethernet is specified at selected speeds of operation; and uses a common media access control (MAC) specification and management information base (MIB). The Carrier Sense Multiple Access with Collision Detection (CSMA/CD) MAC protocol specifies shared medium (half duplex) operation, as well as full duplex operation. Speed specific Media Independent Interfaces (MIIs) provide an architectural and optional implementation interface to selected Physical Layer entities (PHY). The Physical Layer encodes frames for transmission and decodes received frames with the modulation specified for the speed of operation, transmission medium and supported link length. Other specified capabilities include: control and management protocols, and the provision of power over selected twisted pair PHY types.
**5.2.b Scope of the project:** Specify additions to and appropriate modifications of IEEE Std 802.3 to add greater than 10 Gb/s electrical Physical Layer specifications for symmetrical and asymmetrical operation and management parameters for media and operating conditions for applications in the automotive environment.

**5.3 Is the completion of this standard contingent upon the completion of another standard?** No
**5.4 Purpose:** This document will not include a purpose clause.
**5.5 Need for the Project:** Automotive in-vehicle networks have begun the transition from legacy electronic

architectures (domain-based) to zonal architectures using Ethernet links to support fully autonomous operation. This has generated a need for data rates greater than 10 Gb/s in the automotive environment. IEEE Std 802.3 does not currently support rates greater than 10 Gb/s in the automotive environment.

**5.6 Stakeholders for the Standard:** End-users, automotive Original Equipment Manufacturers (car makers) and Tier x automotive suppliers, system integrators, and providers of systems and components (e.g. 4K and 8K cameras, sensors, actuators, artificial intelligence (AI) processors, instruments, controllers, network infrastructure, user interfaces, and servers) for automotive applications.

---

**6.1 Intellectual Property**
    **6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?**
    No
    **6.1.2 Is the Standards Committee aware of possible registration activity related to this project?**
    No

---

**7.1 Are there other standards or projects with a similar scope?** No
**7.2 Is it the intent to develop this document jointly with another organization?** No

---

**8.1 Additional Explanatory Notes :** For 5.5: "Domain-based" architectures have many separate Electronic Control Units (ECU) and networks for each automotive subsystem, e.g. powertrain, information and entertainment (infotainment), body (lights, windows, doors, etc.). "Zonal" architecture consolidates many of these cross-domain ECU functions into a small number of supercomputer-level ECUs networked with greater than 10 Gb/s Ethernet.

For 5.6 -- Tier x refers to the various levels of suppliers to Original Equipment Manufacturers (e.g., car manufacturer). A Tier 1 supplier for example supplies components or subsystems directly to the OEM.